

**CLAIMS**

We claim:

1. A method of processing incoming data, comprising:  
receiving incoming data; and  
determining whether to employ stateless routing of the incoming data based on a destination host associated with the incoming data.
  
2. The method of claim 1, further including:  
determining that stateless routing is to be employed; and  
storing the incoming data only in volatile memory.
  
3. The method of claim 2, further including withholding confirmation of receipt of the incoming data until confirmation of delivery is received from either the destination host or a downstream router.
  
4. The method of claim 3, wherein a copy of the incoming data is to be stored in nonvolatile memory by a sender of the incoming data until the confirmation of receipt is received at the sender.
  
5. The method of claim 3, further including:  
receiving the confirmation of delivery; and  
sending the confirmation of receipt toward a sender of the incoming data.
  
6. The method of claim 2, further including aborting the stateless routing by storing the incoming data in nonvolatile memory and sending confirmation of receipt of the incoming data toward a sender of the incoming data.

7. The method of claim 1, further including:  
storing historical data for the destination host; and  
determining whether to employ stateless routing based on the historical data.
8. The method of claim 7, wherein the historical data includes at least one of previous stateless routing outcomes and previous routing latencies.
9. The method of claim 8, further including calculating a success rate probability based on the previous routing outcomes.
10. The method of claim 8, further including calculating a weighted latency average based on the previous routing latencies.
11. The method of claim 1, further including:  
receiving control data; and  
determining whether to employ stateless routing based on the control data.
12. The method of claim 11, wherein the incoming data is received in a data channel and the control data is received in a control channel.
13. The method of claim 11, wherein the incoming data and the control data are received in a data channel.
14. The method of claim 11, wherein the control data includes at least one of a time-to-live value, a hop count value and a maximum-hop value for the incoming data.
15. The method of claim 14, further including reducing at least one of the time-to-live value and the maximum-hop value if the incoming data is associated with a plurality of destination hosts.

16. The method of claim 1, further including either caching or generating a binary decision representative of whether stateless routing is to be employed.

17. The method of claim 16, wherein the incoming data is associated with a plurality of destination hosts, the method further including:

generating a binary decision for each of the plurality of destination hosts; and  
performing an AND operation between each of the binary decisions to represent whether stateless routing is to be employed.

18. The method of claim 1, further including generating a probability decision representative of whether stateless routing is to be employed.

19. The method of claim 18, wherein the incoming data is associated with a plurality of destination hosts, the method further including:

generating a probability decision for each of the plurality of destination hosts; and  
multiplying the probability decisions together to represent whether stateless routing is to be employed.

20. The method of claim 1, wherein the incoming data is received over a first connection, the method further including sending the incoming data toward the destination host over a second connection, the first and second connections being part of a virtual circuit.

21. The method of claim 20, wherein the sending of the incoming data begins before completion of the receiving of the incoming data.

22. The method of claim 1, wherein the incoming data includes a message.

23. A method of processing messages comprising:  
storing historical data for one or more destination hosts;  
receiving control data;

receiving a message over a first connection, the message being associated with the one or more destination hosts;

determining whether to employ stateless routing of the message based on the historical data and the control data;

storing the message only in volatile memory and withholding confirmation of receipt of the message if it is determined that stateless routing is to be employed;

sending the message to the one or more destination hosts over additional connections forming one or more virtual circuits;

receiving confirmation of delivery from one or more destination hosts associated with the message; and

sending the confirmation of receipt to a sender of the message.

24. The method of claim 23, wherein a copy of the message is stored by the sender of the message in nonvolatile memory until the confirmation of receipt is received at the sender.

25. The method of claim 23 wherein the historical data includes at least one of previous stateless routing outcomes and previous stateless routing latencies.

26. The method of claim 23, wherein the control data includes at least one of a time-to-live value, a hop count value and a maximum hop value for the message.

27. The method of claim 23, further including generating a binary decision representative of whether stateless routing is to be employed.

28. The method of claim 23, further including generating a probability decision representative of whether stateless routing is to be employed.

29. The method of claim 23, wherein the sending of the message begins before completion of the receiving of the message.

30. A machine readable medium comprising a stored set of instructions capable of being executed by a processor to:

receive incoming data; and

determine whether to employ stateless routing of the incoming data based on a destination host associated with the incoming data.

31. The medium of claim 30, wherein the instructions are further capable of being executed to:

determine that stateless routing is to be employed; and

store the incoming data only in volatile memory.

32. The medium of claim 31, wherein the instructions are further capable of being executed to withhold confirmation of receipt of the incoming data until confirmation of delivery is received from either the destination host or a downstream router.

33. The medium of claim 32, wherein a copy of the incoming data is to be stored in nonvolatile memory by a sender of the incoming data until the confirmation of receipt is received at the sender.